REMARKS:

This paper is herewith filed in response to the Examiner's Office Action mailed on March 2, 2007 for the above-captioned U.S. Patent Application. This office action is a rejection of claims 1-37 of the application.

More specifically, the Examiner has rejected claims 1-12 and 25-34 under 35 USC 101 because the claimed invention is directed to non-statutory matter; rejected claims 1-37 under 35 USC 102(e) as being anticipated by Shanahan (US6,732,090); and rejected claims 1-37 under 35 USC 103(a) as being unpatentable over Brecher (US7,054,754) in view of Shanahan. The Applicant respectfully traverses the rejections.

Regarding the rejections under 35 USC 101 independent claims 1, 13 25, and 35 have been amended for clarification to include "storing in a memory information comprising the parsed sentence." Further, claim 25 has been amended to recite in part "A computer program product embodied on a memory and executable to perform operations, comprising." Support for these amendments may be found at least on page 3, lines 1-4; and page 25, line 18 to page 26, line 14. No new matter is added. The rejection of claims under 35 USC 101 is now seen as overcome, and the rejection should be removed.

Regarding the rejection of claims 1-37 under 35 USC 102(e) the Applicants note that the Examiner mistakenly cites both Shanahan and Brecher in the rejection under 35 USC 102(e). However, the Applicants will proceed as interpreting that the Examiner had intended to cite only Shanahan.

Further, the Applicants respectfully disagree with the rejections.

Shanahan relates to Metadata documents wherein "The meta-document 100 includes an identifier 101, a content portion 102, which is a document created by a user or obtained by a user, and a personality 104," (col. 7, lines 26-29). Shanahan appears to disclose a method to search a

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metadata document identifying entities for use to assign a personality to the document, (col. 10, lines 25-35).

Shanahan discloses:

"One or more personalities can be attached to a document. **Each personality thematically and/or contextually encodes a collection of documents service requests 106** which will allow the document to act autonomously on behalf of the creator or reader, anticipating the information needs of both the writer and reader of documents, **keeping the document connected and up-to-date with the rest of information world**," (emphasis added), (col. 10, lines 17-24); and

"As shown in FIG. 3, a personality 104 identifies one or more service requests 106. Each service request includes methods for: **(a) recognizing entities** in the document content 102; and **(b) accessing a service using the recognized entities**," (emphasis added), (col. 10, lines 37-41).

Claim 1 recites:

A method to process a document, comprising: partitioning document text into a plurality of sentences; for each sentence, assigning corresponding associated parts of speech to words, where assigning comprises applying a plurality of regular expressions, rules and a plurality of dictionaries to recognize chemical name fragments, to combine recognized chemical name fragments into a complete chemical name, and to assign the complete chemical name with one part of speech; parsing the sentence into its component parts based at least in part on the assigned parts of speech; and storing in a memory information comprising the parsed sentence.

The Examiner states in the rejection Shanahan discloses "assigning corresponding associated parts of speech to words (part-of-speech), where **assigning comprises** applying a plurality of regular expressions (regular expressions), rules (rules) and a plurality of dictionaries (lexicon; column 10, lines 42-65) **to recognize chemical name fragments** (chemical formula recognizer; column 53, lines 6-19)." The Applicants respectfully disagree with the Examiner.

Shanahan actually discloses:

> **Entities include proper names (e.g., people, places, organizations, etc.), times, locations, amounts, citations (e.g., book titles), addresses, etc. Entities can be recognized** using a variety of known techniques that may include any one or a combination of regular expressions, lexicons, keywords, and rules," and "[...]," and "**A contiguous text string is recognized as an entity if the string is accepted as belonging to the lexicon**," (col. 10, lines 42-57).

The Applicants note that in Shanahan "A "lexicon" is used herein to mean a data structure, program, object, or device that **indicates a set of words that may occur in a natural language set**," (col. 6, lines 62-64). Additionally, Shanahan states that "if "word" is capitalized and is not in the **lexicon (or dictionary, or thesaurus)** then the word is a proper name," (col. 11, lines 1-3). The Applicants contend that Shanahan in its entirety is not seen to disclose a "lexicon (or dictionary, or thesaurus)" **which reads on chemical name fragments**. Clearly, Shanahan is not seen to expressly disclose or suggest "applying a plurality of regular expressions, rules and **a plurality of dictionaries to recognize chemical name fragments**," as in claim 1.

In addition, the Examiner appears to state that "[recognizing] **chemical name fragments**," as in claim 1 is anticipated by the mention in Shanahan of the term "chemical formula recognizer," (col. 53, lines 6-19). However, Shanahan in its entirety mentions the term "a chemical formula recognizer" only **one time**.

Further, in Claim 1 there is included two specific elements respecting chemical names:

  a) recognize chemical name fragments
  b) combine chemical name fragments into completed chemical name

The Applicants contend that the rejection which relies on Shanahan's bare mention of "a chemical formula recognizer" as anticipating both these elements must fail. Shanahan may recognize a chemical formula, which is not agreed with, but Shanahan provides no details as to how this is done.

Claim 1 recites in part:

> "applying a plurality of regular expressions, rules and a plurality of dictionaries to recognize chemical name fragments, to combine recognized chemical name fragments into a complete chemical name"

Imputing the claim's chemical name fragment approach to Shanahan is clearly hindsight. A 35 USC 102 rejection on prior art requires that the cited art disclose to the specificity of the rejected claim; Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1120, 65 USPQ2d 1051 (Fed. Cir. 2002) (**"A single reference must describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art"**). It is axiomatic that a 35 USC 102(e) rejection requires strict identity with every claim element. For at least the reasons stated above Shanahan fails to anticipate claim 1.

Furthermore, Shanahan discloses an auto-completion process to complete **string fragments**. As Shanahan discloses "Once the auto-completion process is invoked, the string of characters **typed by the user**, hereafter referred as the **string fragment** or more generally referred to as the entity fragment, is used at 4604 to extract context information using content surrounding the entity fragment in the document content 4203 to which the entity fragment is targeted," (col. 58, lines 36-41). Shanahan discloses "Document **auto-completion saves a user from having to retype text** (and other document content such as graphics) and related markup such hyperlinks, bibliographic entries etc., **by providing suggestions of words that have been used previously** in a contextually similar manner," (col. 53, line 64 to col. 54, line 2). Further, Shanahan discloses "After the auto-completion system identifies one or more matches, the sorted results are displayed **for user acceptance** as shown in popup window 4708," Thus, Shanahan explicitly relates to **auto-completion** of an entity fragment by prompting the user with suggestions during the **"typing"** of the entity. The Applicants contend that Shanahan is not seen to disclose or suggest **"to combine recognized chemical name fragments into a complete chemical name,"** as in claim 1.

Further, as cited in the rejection of claim 1 Shanahan discloses:

> "**a part-of-speech-tag**, which is optional, **denotes the grammatical usage of the entity (e.g., as a noun, noun phrase, verb, etc.)**; and entity-type denotes whether the entity belongs to one or more predefined classes (i.e., categories) of entities (e.g., person, organization, company name, etc.)," (col. 10, lines 50-55).

Thus, as cited by the Examiner in Shanahan a part-of-speech tag **denotes** the grammatical usage of an entity. Therefore, here Shanahan is not **assigning** an entity with one part of speech. Moreover, for at least the reasons already stated Shanahan is not seen to disclose or suggest combining chemical name fragments in to a **chemical name**. Therefore, the Applicants contend that for at least the reasons already stated Shanahan does not disclose or suggest "to **assign** the **complete chemical name** with one part of speech," as in claim 1.

The Applicants contend that for at least the reasons stated Shanahan does not disclose "assigning corresponding associated parts of speech to words, where assigning comprises applying a plurality of regular expressions, rules and a plurality of dictionaries to recognize chemical name fragments, to combine recognized chemical name fragments into a complete chemical name, and to assign the complete chemical name with one part of speech," as in claim 1.

Therefore, for at least the reasons stated the Examiner is respectfully requested to remove the rejection of claim 1 under 35 USC 102(e).

In addition, for at least the reasons already stated above regarding the rejection of claim 1 the Applicants contend that Shanahan does not disclose or suggest:

as claim 2 recites in part:

"where **the complete chemical name** is assigned a **noun phrase part of speech**."

as claim 3 recites in part:

"where said plurality of dictionaries comprise a **dictionary of common chemical prefixes and a dictionary of common chemical suffixes;**"

as claim 4 recites in part:

"where said plurality of dictionaries comprise a dictionary of stop words **to eliminate erroneous chemical name fragments;**"

as claim 5 recites in part:

"filtering **recognized chemical name fragments** using a list of stop words **to eliminate erroneous chemical name fragments;**"

as claim 6 recites in part:

"where **chemical name fragments** are further recognized by **using common chemical word endings;**" and

as claim 7 recites in part:

"where application of said regular expressions and rules results in punctuation characters being one of maintained or removed **between chemical name fragments** as a function of context."

Furthermore, for at least the reason that the claims 14, 26, and 36; 15 and 27; 16 and 28; 17 and 29; 18 and 30; and 19 and 31 recite language similar to that of claims 2; 3; 4; 5; 6; and 7 respectively, the rejections should be removed for all the claims 2-7; 14-19; 26-31; and 36.

Further, regarding the rejection of claim 10 Shanahan discloses:

> "Tokens from the document are identified **using words that are <u>normalized</u>** using, for example, techniques **such as mapping uppercase characters to lower case**, stemming, etc.," (emphasis added), (col. 49, lines 58-60).

Thus, the Applicants contend for at least the reasons stated Shanahan does not disclose or suggest, as claim 10 recites in part:

"where the characters comprise at least one of **upper case** C, O, R, N and H."

In addition, for at least the reason that claims 22 and 33 recite language similar to that of claim 10 the rejection should be removed for all the claims 10, 22 and 33.

Furthermore, for at least the reasons stated Shanahan does not disclose or suggest, as claim 11 recites in part:

"where the characters comprise **strings of at least one of lower case xy, ene, ine, yl, ane and oic.**

In addition, for at least the reason that the claims 23 and 33 recite language similar to that of claim 11 the rejection should be removed for all the claims 11, 23, and 33.

In addition, for at least the reason that the independent claims 13, 25, and 35 recite language similar to that of claim 1 as noted above, Shanahan does not anticipate these claims. Thus, the Examiner is asked to reconsider and remove the rejection under 35 USC 102(e) for all the independent claims 1, 13, 25, and 35.

Further, in addition to the reasons already stated, as the claims 2-12; 14-24; 26-34; and 36-37 depend from claims 1, 13, 25, and 35 respectively, the Examiner is requested to remove the rejection under 35 USC 102(e) of all the claims 1-37.

Regarding the rejection of claims 1-37 under 35 USC 103(a) over Brecher in view of Shanahan

the Applicants respectfully disagree with the Examiner.

Brecher relates to a method wherein a chemical name is processed and converted to a chemical formula.

First, the Applicants contend that the statement by the Examiner that Brecher discloses **"partitioning document text into a plurality of sentences** (parse; column 8, lines 4-18)"** appears to be unsupported. Here Brecher actually discloses "As **the preprocessed name is parsed into fragments**, a parallel list is derived from the nomTokens corresponding to each fragment (step 1030)," (emphasis added), (col. 8, lines 4-6). Brecher does not disclose or suggest **"partitioning document text into a plurality of sentences,"** as in claim 1.

Further, Brecher discloses:

> "**A chemical name 12 is supplied** via one or more input systems such as end-user keyboard input 14, file-based input 16, or World-Wide Web query input 18. The chemical name is received by computer-based internal processing 20, **which derives structural output** in one or more forms such as a diagram 22 displayed on paper or on a screen, a chemical format file 24, or a graphical format file 26," (col. 2, lines 46-54); and

> "In general, in a preferred embodiment, the internal processing operates by **comparing portions of <u>the chemical name</u> to text strings** that have been predetermined to have respective characteristics and properties in accordance with rules of chemical nomenclature, and with exceptions to such rules, and **assembling a structure from pieces corresponding to selected text strings,"** (emphasis added), (col. 2, lines 59-65).

The Applicants contend that Brecher discloses a method to derive structural output from chemical names. In Brecher "**A chemical name 12 is supplied** via one or more input systems such as end-user keyboard input 14, file-based input 16, or World-Wide Web query input 18," (col. 2, lines 47-50). However, Brecher is not seen as disclosing or suggesting **"to combine recognized chemical name fragments into a complete chemical name,"** as in claim 1.

Furthermore, Shanahan relates to meta-documents which include content associated with personalities further associated with service requests. In Shanahan personalities are used to integrate meta-documents into corresponding meta-documents using results received from service requests. Whereas, Brecher relates to a method for deriving chemical structures output from a chemical name. Thus, the Applicants contend that there is no clear indication of motivation for a person skilled to combine Brecher and Shanahan.

Furthermore, as argued and supported above Shanahan neither discloses nor suggests a method to recognize chemical name fragments nor a method to combine chemical name fragments into a completed chemical name. Moreover, the Examiner admits that Brecher does not specifically teach where said plurality of dictionaries comprises a dictionary of stop words to eliminate erroneous chemical name fragments. Thus, the Applicants respectfully argue that for at least the reasons already stated the Applicants contend that even if Brecher were modified in view of Shanahan, which is not admitted or suggested, the result would still not disclose or suggest claim 1. Thus, the rejection of claim 1 under 35 USC 103(a) should be removed.

Further, regarding the rejection of claims 2, 14, 26 and 36, the Examiner states:

> Brecher discloses a method to process a document, **but does not specifically teach** a method where the complete chemical name is assigned a noun phrase part of speech.
>
> **Shanahan discloses** a method where **the complete chemical name** is assigned a noun phrase part of speech (noun phrase; column 10, lines 42-65 with column 42, lines 5-17), to denote the grammatical usage.

The Applicants contend that for at least the reasons already stated Brecher in view of Shanahan does not disclose or suggest these claims. This is true for at least the reasons already stated that neither Shanahan nor Brecher disclose or suggest, as claim 2 recites in part "where the **complete chemical name is assigned a noun phrase part of speech**."

Further, regarding the rejection of claims 4, 16 and 28, the Examiner states:

> Brecher discloses a method to process a document, **but does not specifically teach** where said plurality of dictionaries comprises a dictionary of stop words to eliminate erroneous chemical name fragments.
>
> **Shanahan discloses** a method where said plurality of dictionaries comprises a dictionary of stop words to eliminate erroneous **chemical name fragments** (stop words eliminated; column 27, lines 28-36 with column 37, lines 28-45 and column 49, lines 58-65), to discard un-important words.

The Applicants contend that for at least the reasons already stated Brecher in view of Shanahan does not disclose or suggest these claims. This is true for at least the reasons already stated that neither Shanahan nor Brecher disclose or suggest, as claim 4 recites in part "where said plurality of dictionaries comprise **a dictionary of stop words to eliminate erroneous chemical name fragments.**"

Further, regarding the rejection of claims 5, 17 and 29, the Examiner states:

> Brecher discloses a method to process a document, **but does not specifically teach** filtering recognized chemical name fragments using a list of stop words to eliminate erroneous chemical name fragments.
>
> **Shanahan discloses** a method comprising filtering recognized chemical name fragments using a list of stop words to eliminate **erroneous chemical name fragments** (stop words eliminated; column 27, lines 28-36 with column 37, lines 28-45 and column 49, lines 58-65), to discard un-important words.

The Applicants contend that for at least the reasons already stated Brecher in view of Shanahan does not disclose or suggest these claims. This is true for at least the reasons already stated that neither Shanahan nor Brecher disclose or suggest, where claim 5 recites in part "filtering recognized chemical name fragments **using a list of stop words to eliminate erroneous chemical name fragments.**"

Further, for at least the reason that the independent claims 13, 25, and 35 recite language similar to that of claim 1 as noted above, for at least the reasons stated the Applicants contend that Brecher in view of Shanahan does not anticipate these claims.

Furthermore, in addition to the reasons stated above, as the claims 2-12; 14-24; 26-34; and 36-37 depend from claims 1, 13, 25, and 35 respectively, Brecher in view of Shanahan is not seen to disclose or suggest these claims. Thus, the rejection should be removed and all the claims 1-37 should be allowed.

Based on the above explanations and arguments, it is clear that the references cited cannot be seen to anticipate claims 1-37. The Examiner is respectfully requested to reconsider and remove the rejections of claims 1-37 and to allow all of the pending claims 1-37 as now presented for examination.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record. Should any unresolved issue remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted:

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